

IN THE CLAIMS:

1. (CURRENTLY AMENDED) A rotating shaft seal assembly comprising:
 - a shaft supported for rotation within a housing;
 - a traction drive rotating a seal ring about said shaft at a speed different than said shaft, wherein said traction drive includes a traction ball supported by said seal ring and driven by said traction drive; and
 - a plurality of seal elements supported by said seal ring, wherein each of said plurality of seal elements includes a flow path generating a desired pressure change across each of said plurality of seal elements.
2. (PREVIOUSLY PRESENTED) The assembly of claim 1, wherein said traction drive includes an inner traction ring rotating with said shaft, an outer traction ring fixed to said housing, and the traction ball supported by said seal ring and driven by said inner traction ring.
3. (ORIGINAL) The assembly of claim 2, wherein said inner and outer traction rings include traction grooves, and said traction ball is supported within said traction grooves.
4. (CURRENTLY AMENDED) The assembly of claim 2A rotating shaft seal assembly comprising:
 - a shaft supported for rotation within a housing;
 - a traction drive rotating a seal ring about said shaft at a speed different than said shaft, wherein said traction drive includes a traction ball supported by said seal ring and driven by said traction drive;
 - a plurality of seal elements supported by said seal ring;
including an inner seal wear insert rotating with said shaft; and
 - an outer seal wear insert fixed to said outer traction ring.
5. (CURRENTLY AMENDED) The assembly of claim 4claim 1, wherein said seal ring includes a plurality of concentric grooves and said plurality of seal elementsseals are disposed within said grooves.

6. (ORIGINAL) The assembly of claim 5, wherein said concentric grooves are disposed on opposing faces of said seal ring.
7. (ORIGINAL) The assembly of claim 6, including a biasing member within each concentric groove for biasing said seal elements against one of said inner and outer seal wear inserts.
8. (CURRENTLY AMENDED) ~~The assembly of claim 1,A rotating shaft seal assembly comprising:~~
a shaft supported for rotation within a housing;
a traction drive rotating a seal ring about said shaft at a speed different than said shaft,
wherein said traction drive includes a traction ball supported by said seal ring and driven by said traction drive; and
a plurality of seal elements supported by said seal ring, wherein each of said plurality of seal elements~~element~~ includes an opening to allow a predetermined amount of leakage.
9. (ORIGINAL) The assembly of claim 8, wherein said seal ring includes a first and second face and five concentric rings are disposed on each of said first and second faces, and a seal assembly is disposed in each of said concentric rings and is biased into sealing engagement with one of an inner and outer wear inserts.
10. (ORIGINAL) The assembly of claim 8, wherein said opening in each of said seal elements is different to provide a calibrated amount of leakage.

11. (CURRENTLY AMENDED) ~~The assembly of claim 2A rotating shaft seal assembly comprising:~~

a shaft supported for rotation within a housing;

a traction drive rotating a seal ring about said shaft at a speed different than said shaft,
wherein said traction drive includes a traction ball supported by said seal ring and driven by said
traction drive;

a plurality of seal elements supported by said seal ring; and including

a preload biasing member biasing said outer traction ring toward said inner traction ring
to provide a desired amount of contact pressure between on said traction ball.

12. (CURRENTLY AMENDED) ~~The assembly of claim 2, including A rotating shaft seal assembly comprising:~~

a shaft supported for rotation within a housing;

a traction drive rotating a seal ring about said shaft at a speed different than said shaft,
wherein said traction drive includes a traction ball supported by said seal ring and driven by said
traction drive;

a plurality of seal elements supported by said seal ring; and

an intermediate traction ring, an intermediate traction ball, and an intermediate seal ring
disposed between said inner and outer traction rings.

13. (ORIGINAL) The assembly of claim 12, including a first drive ring rotating about said seal ring and driven by said traction ball.

14. (CURRENTLY AMENDED) The assembly of claim 12, including a second drive ring and a thrust ball disposed between said first and second drive rings ~~driving~~, said thrust ball driving said intermediate seal ring.

15. (ORIGINAL) The assembly of claim 12, including a plurality of intermediate seal rings, along with a plurality of thrust balls, wherein each of said seal rings rotates at a fraction of said shaft speed.

16. (CURRENTLY AMENDED) A compressor assembly comprising:
 - a shaft supported for rotation within a housing;
 - a rotor driven by said shaft within a compressor chamber, said rotor including a compression vane and a vane extension extending from a rear portion of said compression vane;
 - a traction drive supported about said shaft and rotating at a speed different than said shaft, and
 - a seal ring supporting a plurality of seal elements driven about said shaft by said traction drive, wherein each of said plurality of seal elements include a flow path for generating a desired pressure change between said plurality of seal elements.
17. (ORIGINAL) The assembly of claim 16, wherein said vane extensions produce a centrifugal field between said housing and said rear portion of said compression vane, said centrifugal field between said housing and said rear portion of said compression vane to reduce pressure of gas traveling toward said shaft.
18. (ORIGINAL) The assembly of claim 16, wherein said traction drive includes an inner traction ring rotating with said shaft, an outer traction ring fixed to said housing, and a traction ball supported by said seal ring and driven by said inner traction ring.

19. (CURRENTLY AMENDED) ~~The assembly of claim 18, including~~ A compressor assembly comprising:

a shaft supported for rotation within a housing;

a rotor driven by said shaft within a compressor chamber, said rotor including a compression vane and a vane extension extending from a rear portion of said compression vane, wherein said vane extensions produce a centrifugal field between said housing and said rear portion of said compression vane, said centrifugal field between said housing and said rear portion of said compression vane to reduce pressure of gas traveling toward said shaft;

a traction drive supported about said shaft and rotating at a speed different than said shaft, wherein said traction drive includes an inner traction ring rotating with said shaft, an outer traction ring fixed to said housing, and a traction ball supported by said seal ring and driven by said inner traction ring, and

a seal ring supporting a plurality of seal elements driven about said shaft by said traction drive;

an inner seal wear insert rotating with said shaft; and

an outer seal wear insert fixed to said outer traction ring.

20. (ORIGINAL) The assembly of claim 19, wherein said seal ring includes a first and second face and five concentric rings are disposed on each of said first and second faces, and a seal assembly is disposed in each of said concentric rings and is biased into sealing engagement with one of said inner and outer wear inserts.

21. (ORIGINAL) The assembly of claim 20, wherein each of said seal elements includes an opening, said openings in said seal elements allow a calibrated amount of leakage through said seal.

22. (ORIGINAL) The assembly of claim 21, including an intermediate traction ring, an intermediate traction ball, and an intermediate seal ring disposed between said inner and outer traction rings and a first drive ring rotating about said seal ring and driven by said traction ball.

23. (ORIGINAL) The assembly of claim 22, including a second drive ring and a thrust ball disposed between said first and second drive rings, said thrust ball driving said intermediate seal ring.

24. (ORIGINAL) The assembly of claim 22, including a plurality of intermediate seal rings, along with a plurality of thrust balls, wherein each of said seal rings rotates at a fraction of said shaft speed.